Department of Energy
Germantown, MD 20874-1290

CC Number: CC1999-383
Director: Brog, K
Due: Rec'd: 05/05/1999
PDF File Name: CC1999-383-ID.pdf
Concurrence: **Not Required**
Actionee:

May 4, 1999

MEMORANDUM FOR: Robert L. San Martin, Manager
Chicago Operations Office

George Malosh, Manager
Brookhaven Group

FROM: Glenn S. Podonsky, EH-2

SUBJECT: Focused Integrated Safety Management Evaluation Plan of the Brookhaven National Laboratory, May 1999

Attached is the Focused Integrated Safety Management Evaluation Plan of the Brookhaven National Laboratory, which will begin May 10, 1999. This plan formally documents the scope of the evaluation as discussed with you and your staff during our April 20-22, 1999, site visit. If you have any questions, please contact me at (301) 903-3777, or have your staff contact Chuck Lewis, Team Leader, at (301) 903-1554.

Glenn S. Podonsky
Deputy Assistant Secretary
Office of Oversight
Environment, Safety and Health

Attachment

cc w/attachment:
R. Kiy, EH-1
M. Krebs, SC-1
W. Magwood, NE-1
J. Owendoff, EM-1
J. Wilcynski, FM-1
M. Johnson, SC-80
R. DesMarais, BHG

Responsible
DOE Line Programs: Assistant Secretary for Environmental Programs

Onsite Evaluation Dates: May 10-21, 1999

Approved by:

Charles B. Lewis, III, Team Leader — Date: 5/3/1999

Michael A. Kilpatrick, Director
Office of ES&H Evaluations — Date: 5/3/99

EH Focused Integrated Safety Management Evaluation
Brookhaven National Laboratory
Evaluation Plan

1.0 INTRODUCTION

An EH Focused Integrated Safety Management Evaluation of the Brookhaven National Laboratory (BNL) will be conducted by the Office of Oversight during the period of May through June 1999. The purpose of this evaluation is to determine the adequacy of integrated safety management systems in place and efforts to complete implementation of an integrated safety management system. This evaluation plan outlines the conceptual basis, the methodology, and the data collection activities, evaluation team responsibilities and composition, schedule, and report format.

2.0 CONCEPTUAL BASIS FOR EVALUATION

The basis for the evaluation is a conceptual framework or template that characterizes the principles and programs that are essential elements of a sound safety management program. The Office of Oversight is currently in the process of updating its evaluation protocols and template to better align with current processes and Departmental policy. This conceptual framework is centered on the objectives, principles, and functions for integrated safety management systems (ISMS) described in DOE Policy (DOE P 450.4). The DOE policy describes functions that the Department deems necessary to fulfill its mandate under its enabling legislation to provide "reasonable assurance that the safety and health risk of operating personnel and the public be minimized." Seven guiding principles are identified in the policy: line management responsibility for safety; clear roles and responsibilities; balanced priorities; competence commensurate with responsibilities; identification of safety standards and requirements; hazard controls tailored to work being performed; and operations authorization. The policy also describes five core functions, which provide a structured approach to perform work with rigor commensurate with hazards.

3.0 EVALUATION SCOPE AND METHODOLOGY

The evaluation will focus on the safety management systems and their execution. Where gaps or deficiencies in these systems have been previously identified by the Office of Oversight or self-identified, the focus will be on the adequacy of corrective actions towards successful implementation of ISMS. The evaluation will consider previously identified Office of Oversight Safety Issues and Judgements of Need. The Office of Oversight recognizes that the Office of Science is in the initial phases of responding to the Department of Energy's Implementation Plan for addressing the safety concerns identified in the Defense Nuclear Safety Board's Recommendation 98-1, and the memorandum from Richard C. Crowe, Director, Safety Management Implementation Team, Subject: "Near-Term Actions to Address Safety issues", dated March 26, 1999.

The methodology will ensure that the team evaluates the effectiveness of the BNL safety management program by applying the guiding principles, core functions, and their associated criteria. The entire line organization - i.e., Office of Science, Office of Environmental Management (EM), Chicago Operations Office (CH), Brookhaven Group Office (BHG), contractor, and selected subcontractors will be the focus of this evaluation as depicted in Figure 1.

In order to understand site operations and how safety management is actually implemented, the application of the guiding principles and core functions to a sample of selected work activities, projects, and programs at BNL will be evaluated. These will include selected activities and associated prime-subcontractor functions associated with four work categories:

1. science and technology programs and experiments;

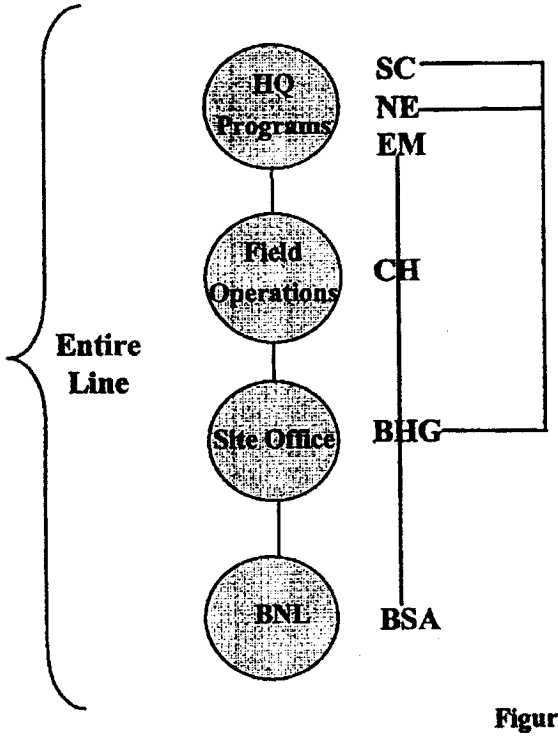
Evaluation Approach

Evaluate Institutional Safety Management Systems

- — **Guiding Principles**
- — **Core Functions**

Evaluation Focus On:

- **Responsibilities**
- **Mechanisms**
- **Implementation**



- **Mission Goal Setting/Expectations**
- **Support**

- **Contract Management**
- **Expectations**
- **Standards & Requirements**
- **Integration and Oversight**

- **R&D Mission**
- **Environmental Protection Mission**
- **Landlord/Tenant Responsibilities**
- **Work Process Execution**

Figure 1

Bill Eckroade	Clear Roles and Responsibility and Competence Commensurate with Responsibilities
Adrian Gardner	Balanced Priorities
Kathy McCarty	Identification of Standards and Requirements
Al Gibson	Hazards Control Tailored to Work Being Performed and Operations Authorization
Mark Good, Focus Area Coordinator	Five Core Functions: Work Planning and Control and Maintenance
Dave Schultz, Focus Area Coordinator	Core Function: Feedback and Continuous Improvement and Emergency Management
Vic Crawford, Focus Area Coordinator	Environmental Management in Work Planning and Control and Waste management
Ed Stafford	Conduct of Operations
Joe Lischinsky	Radiological Control
Josephine Stegall	Industrial Hygiene
Ching-San Huang	Pollution Prevention
Arlene Weiner/Frank Schwartz	Groundwater Protection

5.0 COMMUNICATIONS AND ANALYSIS

During the 2-weeks of onsite evaluation, the evaluation team will review and discuss observations from the day's activities and analyze key observations and areas requiring follow-up during the conduct of daily evening meetings. Team management will provide a daily morning debrief to senior management at the site on emerging issues. A summary outline of emerging environment, safety and health management issues and key activities will be provided to the Deputy Assistant Secretary for Oversight on a daily basis. The entire team will also meet periodically to discuss and analyze issues, including meeting at the midpoint of the 2-week data collection period to collectively reprioritize the second week's activities based on information collected during the first week.

All team members will prepare daily report forms. These forms will be used as an internal team communication and analysis tool. The daily report forms will be used to enter data into "templates" which are an accumulation of strengths and weaknesses for each specific safety management criterion or technical discipline. This "template" is used for recording results, findings, and analysis. The template will be evaluated and analyzed on a daily basis by the specialists and team leadership. This analysis will form the basis for the integration of information, the identification of management issues, the ratings for performance under each guiding principle/core function and its criteria, and writing the evaluation report.

8.0 COMMUNICATION AND COMMUNITY INFORMATION PLAN

An important component of the Focused Integrated Safety Management Evaluation at BNL is informing BNL stakeholders of the evaluation purpose, process and outcome. This will be accomplished through the following actions.

On April 21, 1999, the EH team leader provided an overview presentation of the Focused Integrated Safety Management Evaluation Process to the Brookhaven Executive Roundtable (BER). The BER, which meets monthly, was formed in August 1997 to foster and facilitate timely, executive-level communication and cooperation between the Department and those elected officials, regulators and government organizations with responsibilities for the Laboratory. BER membership includes executive level representation from:

- DOE-BHG and BNL,
- the Town of Brookhaven,
- the Suffolk County Executive's Office and Department of Health Services,
- the New York State Department of Environmental Conservation,
- the U.S. Environmental Protection Agency,
- local, state and federal elected officials (or their representatives), and
- the chairperson of the New York State BNL Oversight Committee.

Community members routinely attend and participate in BER meetings.

The BER will be provided a follow-up presentation this summer on the Focused Integrated Safety Management Evaluation outcomes.

Additionally, the citizen-based BNL Community Advisory Council (CAC) will be approached regarding the Evaluation. The CAC was formed in September 1998 to advise BNL on Laboratory issues of interest or concern to the community. Its 34 members represent the broad array of organizations and individuals involved with BNL. The CAC meets monthly and establishes it own agenda at least one month in advance. Through BNL's routine mailings to the CAC, EH will provide a written overview of the EH project and offer to meet with the CAC for an overview presentation of the Evaluation, discuss the outcomes of the Evaluation, or both.

The BER and CAC will be provided with the Focused Integrated Safety Management Evaluation final report, which will also be available to the public via the Office of Oversight homepage.

EVALUATION CRITERIA AND ACTIVITIES

The following tables provide an overview of the types activities that will be conducted to collect information that will be used to evaluate the guiding principles and core functions.

Line Management Responsibility for Safety	
Evaluation Criteria	Evaluation Activities and Lines of Inquiry
Policy and Expectations: Line management displays a commitment to protect the public, workers, and the environment. Safety policies and goals are documented, and initiatives are under way to improve ES&H programs and implement integrated safety management.	Review HQ (SC,EM,NE) and Chicago Field Office ES&H management programs, policies and goals to assess consistency and clarity of expectations. Review contract ISM clauses, site ISM program documents, gap analysis and program schedule for implementation to assess consistency with expectations.
Leadership: Line management has proactively established a leadership position in guiding line organizations, contractors, subcontractors and workers towards integrated safety management.	Review contractor and subcontractor contracts to ascertain whether appropriate ES&H performance expectations and associated achievement incentives are established. Review DOE Operations Office (BHG), contractor (BSA) and subcontractor management plan(s) to determine how ES&H policy and goals and Quality Assurance (QA) policy and goals are reflected in tasks.
Worker Empowerment: Line managers recognize that active participation by workers is essential to maintain and improve protection of the public, workers, and the environment.	Review DOE HQ and DOE Operations Office ES&H programs and policies to determine interrelationships, and effectiveness of communication between DOE Headquarters and the field.
Stakeholder Involvement: Line management has established and actively supports programs to enhance community knowledge and involvement in ES&H issues.	Review DOE Operations Office, contractor and subcontractor ES&H manuals to determine if they reflect ES&H policy. Interview senior level and mid-level DOE Operations Office, contractor and subcontractor managers, including Facility and Project Managers, to determine who is responsible for safety, what ES&H initiatives have been planned or implemented, and their understanding and support of ES&H programs, policies and goals. Also, determine how they confirm that ES&H policies and goals are effectively communicated to workers.

Line Management Responsibility for Safety (Continued)	
Evaluation Criteria	Evaluation Activities and Lines of Inquiry
	Interview DOE Operations Office and contractor managers to determine actions planned or taken to enhance community understanding and involvement in ES&H issues, and ascertain citizens' role in or impact on ES&H policy formulation and implementation. Interview a sample of external stakeholder representatives to ascertain the effectiveness of DOE and contractor outreach activities related to community ES&H issues. Determine if observed or reviewed management actions and statements are consistent with their ISMS leadership role and demonstrate commitment to established ES&H programs, policies and goals. Determine whether a cooperative, collaborative relationship exists between onsite production and support staff, and between internal and external stakeholders for ES&H issues and activities.

Clear Roles and Responsibilities (Continued)	
Evaluation Criteria	Evaluation Activities and Lines of Inquiry
	Query workers on their responsibilities, how they are documented, and what methods of communication are used to convey this information. Determine if workers understand their responsibilities for implementation of established work control procedures and their environmental management responsibilities. Interview SC, CH, BHG, BNL and subcontractor managers and workers to determine what methods of communication are used to convey important ES&H information within and between the organizations. Determine if mechanisms exist for communicating and adjudicating disputes involving conflicts between work goals, performance objectives, resources, and ES&H requirements. Evaluate mechanisms within DOE line organizations and BNL to measure the ES&H performance of managers and staff. Determine if effective performance is rewarded and if unacceptable performance results in meaningful consequences. Evaluate mechanisms for holding contractors and subcontractors accountable for ES&H performance. Determine if appropriate performance expectations are effectively established, measured, verified, and used by line management to influence ES&H performance.

Competence Commensurate with Responsibilities (Continued)	
Evaluation Criteria	Evaluation Activities and Lines of Inquiry
	Interview DOE and BNL managers and training personnel and review documents to determine: • How performance improvement needs are identified and training programs are developed to meet site competence requirements. • Whether career/skill development processes are available to workers and managers to promote a technically competent workforce. • Whether key indicators of worker and operating performance are used to revise training programs to ensure workers are meeting established safety and performance goals. • How lessons learned are reviewed and incorporated as appropriate into training programs. • Whether technical training is periodically reviewed and evaluated for content, delivery, cost effectiveness, and adherence to learning objectives. • How job-specific requirements (and/or hazards) are addressed or incorporated into training activities, or revised when changes in job tasks occur.

Define the Scope of Work; Balanced Priorities (Continued)	
Evaluation Criteria	Evaluation Activities and Lines of Inquiry
Provide for Integration: ES&H functions and activities are integrated into program, activity, and work planning at all levels of the line organization. • Has integrated safety management clearly been linked to resource planning and prioritization processes for all types of work, regardless of the hazards? • Institute a safety management system that provides for the integration of ES&H management processes, procedures, and/or programs into site, facility, and work activities in accordance with DEAR ES&H clause 48 CFR 970.5204-2. • Establish a process to assure that the identification and minimization of hazards associated with work constitutes an integrated and collaborative activity involving all organizational units.	How has the site integrated the concepts of ISM into resource allocation and prioritization processes? • How has the site integrated ISM into their day to day processes for the management, prioritization and allocation of resources? • How are site priorities maintained from year to year? • Are site resources allocated in a manner consistent with established priorities? How are safety and health professionals and workers integrated into resource planning efforts? • Is line management receptive to ES&H professional and worker involvement during resource and work planning activities? • Does resource planning for work activities include the involvement of ES&H professional and workers at an appropriate level? • Are all of the appropriate parties involved in the planning of work activities? Are the line and oversight staff responsible for ES&H empowered to critically question funding assumptions (e.g., indirect, direct, capital projects, GPP), priorities, and conclusions made by the contractor? Has integrated safety management been adequately incentivized in the Brookhaven Science Associates (BSA) Contract? • Does the Performance Evaluation Plan for BSA provide adequate incentives for the priorities established by line management? • Is DOE holding the contractor accountable for performance?

Define the Scope of Work; Balanced Priorities (Continued)	
Evaluation Criteria	Evaluation Activities and Lines of Inquiry
	What data sources are used as a basis for BHG/BSA prioritization? • Backlog Management Systems ▪ Are the backlogs prioritized and risk ranked? ♦ Site-level? ➢ How are site-level backlogs developed and maintained? ➢ How do the backlogs influence the business systems that prioritize, plan, and allocate the site's resources? ♦ Facility-level? ➢ Does the facility manager maintain a backlog of items impacting the operation and maintenance of his/her facility? ➢ How are resources for these items planned, budgeted, and allocated? ♦ Service (i.e., preventative maintenance, corrective maintenance, etc.)? ▪ Are there significant ES&H items on hold? • Issues Management Systems ▪ Is there a process for prioritizing issues and ensuring that the information is used during annual planning processes? ▪ Are the mechanisms for communicating the issues up to senior management in place? • Award Fee / Performance Evaluation Plans ▪ Is DOE holding the contractor accountable for maintaining business systems that address ISMS? ▪ If weaknesses are identified during execution, how are these weaknesses rolled in to planning processes? • External input and Self Assessment Data ▪ How is assessment data tied to the site's business systems? ▪ Is BNL using assessment data to effectively plan, allocate, and prioritize activities?

Identification of Standards and Requirements; Analyze the Hazards	
Evaluation Criteria	Evaluation Activities and Lines of Inquiry
Identification of Standards and Requirements: Line management has identified, communicated, executed, and monitored all applicable DOE requirements, and Federal, state, and local regulations. DOE and contractor line management have agreed upon the safety standards selected. **Sitewide and Facility-Specific Requirements:** The identified standards and requirements are commensurate with site-specific hazards and are tailored to the work at each management level	Review SC, CH, and BHG FRAMs to determine respective responsibilities for identifying, evaluating for applicability, and transmitting requirements to the contractor, and to determine responsibilities and authorities for approving exemptions from DOE requirements. Interview BHG, and possibly CH, managers to determine how new and revised requirements are identified and evaluated for possible inclusion in the contract, and subsequently communicated and transmitted to the contractor. Interview BHG and BNL managers and review applicable documents to determine how State, local, and environmental laws, regulations, and standards are identified, communicated, and invoked (List A equivalent). Evaluate mechanisms to flowdown these requirements to the project and facility levels. Interview BHG and BNL managers and review procedures and/or agreements to determine how non-DOE requirements are kept up-to-date. Interview BHG managers and review procedures to determine how Federal requirements (e.g. FEOSH, NEPA) are managed and administered. Review the BNL contract and selected subcontracts (List B) to determine whether all DOE Orders and Standards applicable to the BNL mission and hazards have been identified and incorporated.. Review the BNL contract, selected subcontracts, performance clauses, and other binding agreements to determine whether the "ISM" and "laws" clauses have been incorporated as required. Interview BHG and BNL managers to determine whether decisions regarding conflicting requirements, applicability determination, and implementation schedules are being made at the appropriate management level. Interview BNL managers and designated "functional leads", and review procedures to determine how new and revised requirements are identified and analyzed for cost, scope, and schedule impacts, and then institutionalized and implemented.

Hazard Controls Tailored to Work Being Performed; Develop and Implement Hazard Controls	
Evaluation Criteria	Evaluation Activities and Lines of Inquiry
Establish Processes: Line management has established processes for identifying and tailoring controls for hazards associated with all facilities, operations and activities. **Establish Safety Controls:** Hazard controls are established based on the understanding of the hazards, vulnerabilities, and risks in the work environment (e.g., nuclear, chemical, industrial, physical, and natural phenomena). **Implement Controls:** Line management has established methods to implement controls at every level and which ensure that controls remain in effect as long as hazards are present.	Review the status of the HFBR Safety Analysis Report, the AGS Safety Assessment Document, and the Hazards Analysis Special Permit (HASP) for environmental restoration ground water treatment facilities. Determine if these documents are in accordance with applicable DOE orders. Review environmental impact statements and environmental Assessments to determine if these documents are up to date. Evaluate the process for review and approval of planned work (such as experiments, facility design changes and operating procedure changes) to determine if the process includes provisions to assure that the hazards and controls associated with planned work are within the scope of hazards and controls described in safety and environmental analysis documentation. Evaluate the process for screening planned work for identifying unreviewed safety questions (USQs) for compliance with DOE orders. Assess DOE Area Office directives for review of authorization basis documents. Review selected activities (work packages) to determine if hazards analysis, exposure assessment, medical monitoring, environmental controls and worker involvement are built into early work planning, and that appropriate administrative and engineering controls have been established. Walk down facilities and procedures to verify implementation of authorization basis commitments. Review procedures and interview managers and workers to determine whether an effective process for incorporating worker input exists and is included during work planning.

Operations Authorization; Perform Work Within Controls (Continued)	
Evaluation Criteria	Evaluation Activities and Lines of Inquiry
	• Are special permits (Radiological Work Permits (RWPs), hot work, confined space work) effectively followed to control hazards? • Is there periodic and adequate supervision of work activities? • Are postings, barriers, criticality limits, sampling requirements, stop work limits, and proper Personal Protection Equipment (PPE) use complied with? Interview DOE and contractor managers and workers and review procedures and incident reports to determine whether a stop work/restart authorization process exists and circumstances associated with its application are clearly defined and understood.

FOCUSED SAFETY MANAGEMENT EVALUATION
BNL

DAILY REPORT

Name:	Date:

Area of Responsibility:

Today's Activities:

Observations/Supporting Evidence

Difficulties Encountered:

Key Activities Tomorrow:

ANNUNCIATOR WINDOW RATING COLOR CODES

This rating system utilizes colored panels to provide a visual summary of performance within safety management systems, programs, or functions. The colors include green for acceptable or normal performance, yellow where improvement and additional attention is needed, and red where significant weaknesses are identified and management attention and action is warranted. This color rating system is intended to provide line management with a tool for determining where resources might be applied toward improving safety management. It is not intended to provide a relative rating between specific facilities or programs at different sites because of the many differences in missions, hazards, and facility life cycles, and the fact that these EH evaluations use a sampling technique to evaluate management systems and programs.

The advantage of this rating system is the ability to communicate performance information quickly and simply. The rating colors can also be changed during subsequent evaluations to recognize relative improvements or to identify deteriorating performance.

Color	Programmatic Indication	Management response
Red	significant weakness	immediate attention, focus, and action
Yellow	improvement needed	significantly increased attention
Green	effective performance	address only specific deficiencies

Explanation

Red: Indicates senior management needs to immediately focus attention and resources necessary to resolve management system or programmatic weaknesses identified. A significant weakness would normally be a rollup of a number of issues identified within a management system or program. A red annunciator window would, in most cases, warrant a line organization corrective action plan with assigned responsibilities and management follow-up to ensure effective resolution and improvement.

Yellow: Indicates a need for improvement in and a significant increase in attention to a management system or program. This annunciator window color is anticipatory and provides an opportunity for line management to correct and improve performance before it results in a significant weakness and a red annunciator window.

Green: Indicates effective overall performance in a management system or program. There may be specific issues or deficiencies that require attention and resolution but that does not degrade the overall effectiveness of the system or program.